

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Canceled).

16. (New) A device, comprising:

an optical waveguide for receiving and guiding input light;

at least a first electrode positioned on the optical waveguide;

a liquid crystal holographic optical element positioned on the first set of electrodes; and

at least a second electrode positioned on the liquid crystal holographic optical element, wherein the at least first and second electrodes are adapted to selectively apply a voltage across the liquid crystal holographic optical element;

wherein the liquid crystal holographic optical element comprises at least one hologram that is selectively adjustable, based on a voltage applied across the liquid crystal holographic optical element by the at least first and second electrodes, between a first state, in which substantially all of the input light is reflected back to the optical waveguide via total

internal reflection, and at least one other state, which causes at least some of the input light to be transmitted through the liquid crystal holographic optical element .

17. (New) The device of claim 16, wherein the at least first and second electrodes comprise first and second sets of electrodes, respectively, that together define pixel areas.

18. (New) The device of claim 17, wherein the first and second set of electrodes are adapted to selectively apply a voltage across one or more pixel areas of the liquid crystal holographic optical element.

19. (New) The device of claim 17, wherein the first and second sets of electrodes further define sub-pixel areas.

20. (New) The device of claim 19, wherein the first and second set of electrodes are adapted to selectively apply a voltage across one or more sub-pixel areas of the liquid crystal holographic optical element.

21. (New) The device of claim 20, wherein the sub-pixel areas comprise red, green and blue sub-pixel areas.

22. (New) The device of claim 21, wherein a hologram in the liquid crystal holographic optical element is adapted to diffract red, green and blue light in the red, green and blue sub-pixel areas, respectively.

23. (New) The device of claim 16, wherein the first state is achieved when no voltage is applied across the liquid crystal holographic optical element and the at least one other state is achieved by applying a voltage across the liquid crystal holographic optical element.

24. (New) The device of claim 16, wherein the at least one other state comprises a state in which substantially all of the input light that impinges a selected area of the liquid crystal holographic optical element is transmitted through the selected area if the liquid crystal holographic optical element.

25. (New) The device of claim 16, wherein a percentage of the input light that is transmitted through a selected area of the liquid crystal holographic optical element is continuously variable between substantially 0 and substantially 100% based on a magnitude of the voltage applied across the selected area of the liquid crystal holographic optical element.

26. (New) The device of claim 16, further comprising a light source for generating the input light.

27. (New) The device of claim 16, wherein the optical waveguide comprises a light guiding core with an area that is substantially the same as an effective display area.

28. (New) The device of claim 16, wherein the optical waveguide comprises a plurality of light guiding cores.

29. (New) The device of claim 28, wherein the plurality of light guiding cores are arranged substantially parallel to the first or second set of electrodes.

30. (New) A device, comprising:
at least one cladding layer;
a core layer on each cladding layer for receiving input light;
at least a first electrode on the core layer;
a liquid crystal holographic optical element on the at least first electrode;
at least a second electrode on the liquid crystal holographic optical element,
wherein the at least first and second electrodes are adapted to selectively apply a voltage across the liquid crystal holographic optical element;

wherein the liquid crystal holographic optical element comprises at least one hologram that is selectively adjustable, based on a voltage applied across the liquid crystal holographic optical element by the at least first and second electrodes, between a first state, in

which substantially all of the input light is reflected back to the core layer via total internal reflection, and at least one other state, which causes at least some of the input light to be transmitted through the liquid crystal holographic optical element.

31. (New) The device of claim 30, wherein an index of refraction of the liquid crystal holographic optical element in the first state is substantially the same as an index of refraction of the at least one cladding layer.

32. (New) The device of claim 30, wherein the at least first and second electrodes comprise first and second sets of electrodes, respectively, that together define pixel areas.

33. (New) The device of claim 32, wherein the first and second set of electrodes are adapted to selectively apply a voltage across one or more pixel areas of the liquid crystal holographic optical element.

34. (New) The device of claim 32, wherein the first and second sets of electrodes further define sub-pixel areas.

35. (New) The device of claim 34, wherein the first and second set of electrodes are adapted to selectively apply a voltage across one or more sub-pixel areas of the liquid crystal holographic optical element.

36. (New) The device of claim 35, wherein the sub-pixel areas comprise red, green and blue sub-pixel areas.

37. (New) The device of claim 36, wherein a hologram in the liquid crystal holographic optical element is adapted to diffract red, green and blue light in the red, green and blue sub-pixel areas, respectively.

38. (New) The device of claim 30, wherein the first state is achieved when no voltage is applied across the liquid crystal holographic optical element, and the at least one other state is achieved by applying a voltage across the liquid crystal holographic optical element.

39. (New) The device of claim 30, wherein the at least one other state comprises a state in which substantially all input light that impinges on a selected area of the liquid crystal holographic optical element is transmitted through the selected area of the liquid crystal holographic optical element,

40. (New) The device of claim 30, wherein a percentage of the input light that is transmitted through a selected area of the liquid crystal holographic optical element is continuously variable between substantially 0 and substantially 100% based on a magnitude of the voltage applied across the selected area of the liquid crystal holographic optical element.

41. (New) The device of claim 30, further comprising a light source for generating the input light.

42. (New) The device of claim 30, wherein the core layer has an area that is substantially the same as an effective display area.

43. (New) The device of claim 30, wherein the at least one cladding layer and core layer comprise a plurality of cladding layers and respective core layers.

44. (New) The device of claim 43, wherein the plurality of core layers are arranged substantially parallel to the first or second set of electrodes.